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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,693	04/21/2000	Ralf Bohnke	450117-02477	6440

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/556,693

Applicant(s)

BOHNKE ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 1 (Fig. 2). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

As provided in 37 CFR 1.77(b), each of the following sections of the specification should appear in upper case, without underlining or bold type, as a section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (d) BRIEF SUMMARY OF THE INVENTION.
- (e) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

3. The abstract of the disclosure is objected to because it should not compare the invention with the prior art. Further, the abstract should be rewritten to correct grammatical errors, and in the last line, "Fig. 1" should be deleted. Correction is required. See MPEP § 608.01(b).

4. The specification is further objected to because of the following informalities:

Page 9, line 18, "prior art" should be --present invention--.

Appropriate correction is required.

Claim Objections

5. Claims 1-11 are objected to because of the following informalities:
- a. Claim 1, line 4, and claim 7, line 4, "(B-FIELD)" should be --(B-FIELD)--.
 - b. Claim 1, line 5, and claim 7, line 5, "at least one first part" should be --the at least one first part--.
 - c. Claim 1, line 7, and claim 7, line 7, "at least one second part" should be --the at least one second part--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claim 6 is drawn to a transmitter, but do not recite any components or structure for performing the function of transmitting the synchronization preamble, and therefore do not define the transmitter used. The Examiner suggests that the claims be amended to include appropriate circuitry and structure.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

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10. Claims 1-5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The synchronization preamble structure of claims 1-5 is not tangibly embodied thus making it incapable of causing functional change to the OFDM receiver. The Examiner suggests that the claims be amended to recite that the synchronization preamble structure is "embodied in computer-readable media" in order to permit the synchronization preamble structure's functionality to be realized. See MPEP § 2106(IV)(B)(1)(a).

11. To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Mizoguchi et al.

14. Regarding claims 1 and 7, Mizoguchi et al. disclose a synchronization preamble structure for the synchronization of a receiver of a OFDM transmission system comprising a first part and a second part (see Fig. 2b), where the first synchronization symbol is used as a start symbol required for detecting data (p. 126, section III), considered to be used for a frame detection, and the repetition signal is used for timing and frequency synchronization (p. 126, section IV, subsection 4.1 to p. 127 subsection 4.2), where the first part and the second part contain inverse

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Fourier transformed frequency domain sequences of complex symbols (see Fig. 1), and the first part is considered to be set depending on the second part for optimal performance, as they are set to be identical.

15. Regarding claims 2 and 8, Mizoguchi et al. state that a correlation value of the repetition signal is obtained to determine the symbol timing (p. 127, subsection 4.2, first paragraph), where the correlation is considered to be optimized.

16. Regarding claim 6, Mizoguchi et al. show a transmitter in Fig. 1 for transmitting the synchronization preamble.

17. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Schmidl et al. (disclosed by Applicant).

18. Regarding claim 6, Schmidl et al. disclose the transmission of synchronization preamble in an OFDM system (see p. 1301, subsection 3.1). The transmitter of Schmidl et al. transmits synchronization preambles, and is thus considered to be designed for transmitting a preamble according to claim 1. The specific preamble defined in claim 1 is not considered to limit the transmitter to a particular structure and therefore does not limit the scope of the claim. See MPEP § 2106(II)(C).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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20. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al.

21. Regarding claims 3 and 9, Mizoguchi et al. disclose a synchronization preamble having two parts, where the first and second parts are identical, and further state that the synchronization signal is generated by assigning the vector signals only to even subcarriers while odd subcarriers are zero (see p. 126, section III). Mizoguchi et al. do not expressly state that the frequency domain sequences of 12 complex symbols are mapped to a 64 point IFFT. However, the number of symbols and the number of points of the IFFT are deemed design considerations that fail to patentably distinguish over the prior art of Mizoguchi et al.

Allowable Subject Matter

22. Claims 4 and 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101 and the claim objections, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

23. Claims 10 and 11 would be allowable if rewritten to overcome the claim objections, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Jones U.S. Patent 6,549,592 discloses a burst timing synchronization system in an OFDM communications system.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dbl

7/22/03


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600